C.A.T.U.G.
NITE-TIMES NEWS

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EDITORIAL

I'd like to open this second issue of the Nite-Times News with a thank you to those who have provided articles and other support to this effort. I especially want to thank our host here at the Nite Owl Special, Rich Pranitis. Rich spends a lot of his time and money providing all of us telecommunters with one of the finest bulletin boards in Chicagoland. Rich is increasing the memory of the system and therefore, future issues of the Nite-Times News will be available for reading on-line in the Timex information area of the General Library. As is our policy, hard copies will be made available to all CATUG members at the monthly meetings. It is free for all to share. If you desire to have it mailed to your home, please provide fifty cents per issue or $6.00 per year to cover the cost of postage. If you desire to reprint any articles that appear on here, please provide credit to the author and where it came from. If you have any suggestions or would like to submit an article, leave feedback to Gary Lessenberry (ID30) or write to me at 1885A Yorktown Avenue, Great Lakes, Illinois 60088.

Articles that appear in this issue are:
     Brief Overview Of Artificial Intelligence On The Spectrum
     Saga Elite Keyboard Reveiw
     Timmachine and FDD System Compatibility
     Free Z80 And 68008 Manuals
     Notes From The Library
     Pascal For The TS-2068
     JLO FDD Interface Hardware Project

BRIEF OVERVIEW OF ARTIFICIAL INTELLIGENCE ON THE SPECTRUM
by Pete Fischer

Artificial Intelligence, or AI has been very popular in the Computing Press as well as the Popular Press. It tends to capture people's imagination. After the popularity of movies

like STAR WARS, robots which appear to have 'personalities' are thought to be in the very near future. At least at this point, nothing approaching these fictionalizations has even been approached.

Approximately four years ago, the Japanese threw a gauntlet in front of the world computing community. They announced, in effect, the intention of building a whole new generation of machine. One which would be at or close to the intelligence of a human being. The Japanese government has devoted the equivallent of Billions of dollars to this project! If they were to succeed in dominating the world market in this vital industry, it will, without question, catapult Japan into the position the US now holds in the field of computing, that of world leader.

But the US has seen this challenge, and is answering it. So is the European community. But for some reason, either due to a difference in press coverage or whatever, the Europeans appear to be much more conscious of the challenge from one end of the Computing Community to the other. Even among computer hobbyists, the idea of actively learning about AI is taken much more seriously. For many years, LISP was considered to be the 'official' accepted language of AI. It was written in the US, and is probably the oldest language still in active use. But the Europeans didn't like it, and the French wrote another one called PROLOG. The British took the French work and polished it to the finished product seen today. The Japanese liked it so much that they adopted it as the Official language of their 'Fifth Generation Project'. Thus PROLOG took it's place in the international AI picture. (Before I go any further, I would like to mention that there is a Micro-Prolog available for the Spectrum!) So you can see, that the Europeans are right on top of what is happening in AI. There are, in fact, at least 5 books (probably more) devoted exclusively to AI on the Sinclair computers. I have found only 2 for the Apple, both of which were published in Britain. Why the Europeans are so much more aware of the AI revolution, I don't know. But I have gone to a bit of trouble to bring some of the information they have to the U.S. as well as mixing in what I Could find already here. In the months to come, I will be reporting here on what I have found. It has surprised me too, just how far a 'tiny' (by AI standards) 8 bit computer could be taken. In addition to the Micro-PROLOG, AI programs are also written in LOGO and PASCAL which are also available for the SPECTRUM. But the majority of work I have done in plain old BASIC. This primarily because everyone who has the computer also has the BASIC and can then run and under stand them easily.

In December of 1984, Mr. Sinclair announced a new branch of Sinclair Research. This new branch was to study a new chip technology which, once makeable, will be a very big step toward producing an AI chip. Essentially, it increases the capacity of a single chip, a sort of a very, very, very large scale integrated circuit. It will allow 64 or 128 or perhaps 256 bit microprocessors. (Why not?)

It is my opinion that Mr. Sinclair's affinity for AI is more

then casual. I believe that he sees the future of computing as having a great deal to do with AI and he plans to be very much in the race. His recent move to sell off the retail portion of his enterprise more than anything will boost his position. It will give him $7.4 Million to finance his Research.

One quick word on the QL, because of Sinclair's interest in AI, he struck a deal with Strathclyde University in Scotland. He sold them a QL for every student and faculty member in the school. Over 7,000 in all, and the good news is, Strathclyde in an important center for AI research in Scotland, research written and executed on QL's. There is LISP, PASCAL, OS-9, FORTRAN, FORTH, APL and more on the way, including CP/M and MS-DOS capabilities. The current user base for the QL is estimated at over 170,000 worldwide. Some say that Amstrad will drop the QL altogether. My understanding is that rights to the machine will simply be sold to a third party. In any case, there is a significant supply of machines currently in existence. It is a very powerful machine for the price.

Please stay tuned to this BBS for more articles on this general topic. There are a number of programs on this BBS available for downloading. There are documentation files to go with them. If you have any questions or comments, please leave mail here (Nite Owl Special BBS) or write to: Pete Fischer/P.O. Box 2002/ Tempe,AZ 85281.

SAGA 3 ELITE KEYBOARD REVIEW
By Ken Duda

This is not your run of the mill keyboard. And I can tell youright now, its not for everyone. By that I mean that it is more for the advanced Timex/Sinclair User. I purchased mine from Saga Systems Limited, 2 Eve Road, Woking Surrey, England GU21 4JT. It required an International money order for 69.95 pounds ($100.00 U.S. Dollars). Delivery took about 4 weeks, and was shipped to me marked, Sample.

The Saga 3 Elite has 88 keys, of which 27 are single key functions. The keyboard is arranged as two banks of keys. On theleft are 10 keys: True and Inverse Video--Single key functions--the rest, Load, Save, Clear, Copy, Continue, Pause, List and Runare not, but merely j,s,x,z,c,m,d, and r keys for ease of use.

The main body of keys, the remaining 78, are in one large block. To the left of the QWERTY section are Edit, Graphic Mode, Caps Lock, Extended Mode (single key) and Symbol, Caps Shifts, which are duplicated on the right. The top row has both the numbers and Symbol Shifted legends printed on them. The QWERTY keys have only the letters, that means that if you are new to the Timex/Sinclair you will have some difficulty locating the correct key, although a three-colour card that lays at the top of the keyboard, is supplied, to help identify all the combinations the Timex/Sinclair has.

To the right are another eleven single key functions (?`"=;:$,.) plus Break (Caps Shift/Space) and Stop (Symbol

shift/A). On the far right is a numeric pad, with a double-sized zero key, surrounded by the four maths functions (/*-+), four shifted cursor keys, an extra comma and period and a Delete key.

Now for some of the problems I encountered. First of all, this keyboard was designed with the Spectrum in mind. Unlike the 2068, the Spectrum has two leads coming from the keyboard, one on the left, and one futher to the right side of the computer. I solved this by getting a 16-pin DIP jumper-18" long from RadioShack, part # 276-1976. Then I desodered the keyboard connector from the bottom side of the 2068 keyboard. I then cut the 2068 connector in half, so that I had a connection for one lead (5 wires) the remaining for the other lead on the Elite 3, cut the DIP jumper in half, trimed as nessary, sodered the free ends to the 2068 connectors, and last, broke off half (8) of the prongs on each DIP connector. Then pluged everything together, with the DIP connectors going to the 2068 keyboard connector. This is very hard to put into writing, so if you can't make sence of it call me at 312-562-5898, after 6:00 P.M.

The last problem was the bottom half of the case for the Elite 3 keyboard. After I did a little trim work on the bottom half of the case, and placed the bare 2068 board into it, I found that there was not enough room to put the cover on, due to the Russell ROM Switch. We're talking only an eigth of an inch. Well, because of my love of working with wood, I just simply built a larger wooden half to accommodate the works. I even have an opening in front, to allow me to slide my Russell/Kempston joystick into the cartridge port.

Like I said, this one's not for everybody. But what a joy to use, especially if you use your computer for word processing alot. In fact, Saga also sent me a free copy of their version of M/Script, they call their's "The Last Word". Belive me, it really was easy to do, the hardest part was getting started.

TIMAMACHINE AND FDD SYSTEM COMPATIBILITY
Provided by James Brezina

Timamachine may not work properly with the Zebra FDD system. Depending on which version of the FDD you have, either the keyboard will lock up as soon as Timamachine runs or everything will work correctly until you use FDD I/O commands. It should be noted that if you choose to modify Timamachine for the FDD as listed in this article, you will loose some freindlyness and ease of use.

To determine which problem you have, do the following: Load Timamachine from tape, answer N to the backup copy prompt, the enter CAT *. If you are able to do this, then you have the FDD I/O problem. If you can't enter CAT *, you have the locked keyboard problem.

To correct these problems, you should first transfer Timamachine to FDD: MERGE the BASIC loader; change line 9997 to SAVE * ... (all SAVEs!); SAVE TIMAMACHINE LINE 9997; then enter

GOTO 9997. Answer Y to the Backup Copy prompt. Now restart the system and MERGE Timemachine, then complete the correction with one of the following two procedures:

A. For a Locked Keyboard:
1. Line 40: change 26688 to 26694
2. Change all SAVEs in line 8070 to SAVE * (DELAY CODE can be deleted).
3. Change all LOADS in line 9997 to LOAD *.
4. To use Timamachine, LOAD it from FDD and enter or load a BASIC program. Then invoke the Timamachine options as follows:
*C is invoked by typing RANDOMIZE USR 37476
*t will not work
*x is invoked by typing RANDOMIZE USER 37476
ERASE is invoked by typing RANDOMIZE USR 37536
*d is invoked by typing RANDOMIZE USR 37460
*e is invoked by typing RANDOMIZE USR 37468
NEW will no longer be trapped.

B. For the FDD I/O Problem:
1. Line 9997: remove the last command, GOTO 8000
2. Add lines 9998 and 9999 as follows:
9998 RESTORE 9999: FOR x=23780 TO 23792: READ y: POKE x,y: NEXT x: POKE 37402,228: POKE 37403,92: GOTO 8000
9999 DATA 254,122,194,224,146,237,70,241,62,230,195, 148,146
3. Enter: SAVE *"TSTIME"LINE 9997. Note: Use the name by which your version calls the first part of Timamachine.
4. To use: *z prior to any FDD I/O operation. RANDOMIZE USR 26688 after all FDD I/O operations. All other commands as per manual.

FREE Z80 AND 68008 TECHNICAL MANUALS
By Gary Lessenberry

Timex/Sinclair technical information is often expensive and hard to come by. As we send our hard earned dollars to the supportive mail order T/S venders, we are never quite certain if we're getting our money's worth. Well, for all of us Timex and Sinclair users there are free manuals available for the asking from those people who produce the microprocessors that our computers are based on. When I called the local Zilog distributor and asked for any available technical information on the Z80 CPU, they sent the following technical manuals: The Z80 & Z80A CPU, The Z80 DMA, The Z80 SIO, The Z80 CTC, and a two volume Microprocessor Applications Reference Manual. Needless to say, I was impressed! So, after I bought a QL, I called Motorola Semiconductor Products and requested technical information for the Motorola 68008 microprocessor. They sent the following: a MC68008 Programing Reference Card, The M68000 Programmer's Reference Manual, The MC68008 Advanced Information Manual, and The 16/32-Bit Microcomputer System Components Manual. Lastly, as I was building a JLO FDD interface, I wanted

more theory of how it worked. So, I contacted Western Digital
for information about their WD1770 Disc Controller which lies
at the heart of the JLO FDD interface. They sent a free copy of
their Storage Management Handbook to me.

These manuals will not make you a machine code wiz
overnight, but they are a great aid for machine code programing
and hardware projects. The local distributor for Zilog is Dolin
Sales Co., 609 Academy Drive, Northbrook, IL 60062, (312)
498-6770. Motorola Semiconductor Products Inc. is located at
2060 Algonquin Road, Schaumburg, IL 60195, (312) 576-6983.
Western Digital is at 1827 Walden Office Sqaure, Suite 308,
Schaumburg, IL 60173, (312) 397-3111

NOTES FROM THE LIBRARY
By Donald Brumfield

This month we began a public domain program swap with the
Cleveland Users Group, and we are in discussions with other
groups as we attempt to expand out library.
THIS MONTHS PREVIEWS.....
  REALESTATE: This personal use program will calculate the
                  mortgage paymants and related costs.
  ADDRESSBOOK: A great data file program which will store
                  names and addresses, it has the option that
                  will let you create mailing labels for those
                  dreaded holiday mailings.
  SPEC GOLF: You aspiring duffers will love the challenge
                  of this Spectrum game...GREAT GRAPICS!
PLEASE ASSIST ME....
By typing in a program or utility from a book, magazine or
your own creation and submitting it to the CATUG Library. This
will ensure that we can have a large and updated program base
to share with other user groups.
HERE'S THE DEAL (GRIN)
Library usage is free, and I would like to give you any
programs that you wish to have. Next month, I will run a
listing of all the programs in the Library. If you desire any
copies of the software listed, please send your request with a
blank tape and 75 cents in stamps for return postage,
                        --OR--
send me a tape with a minimum of two programs and I will pay
the return postage. My mailing address is: 1185 Hygate St.,
Roselle, IL 60172. Please list on donated tapes if the programs
are TS-1000, Spectrum or TS-2068. PLEASE SUPPORT YOUR LIBRARY.

                        TIMEXIN ON...DON

PASCAL FOR THE TS2068
By Rick Conners

One of the buzz-words in the programming field these days is, "structured programming". In general, this refers to programming in blocks of code, each a fairly independent unit unto itself. One of the principal languages supporting and encouraging structured code is Pascal.

Pascal was invented by Nicholas Wirth in 1970 and quickly gained acceptance in the academic community as a teaching tool. With the introduction by Borland of the Turbo Pascal package, this popular language proliferated quickly in the mini and home computer markets. Although the Turbo version of Pascal is not available for the Timex/Sinclair family of computers, HISOFT of England has made available a fairly full featured version of Pascal. It represents an excellent value, particularly for those interested in getting more speed out of their 2068 than Timex BASIC can provide. While a detailed look at the Pascal language would take more room than we have here, a few points about the HISOFT package can be noted.

The HISOFT Pascal package consists of a cassette tape containing the compiler/editor program (written in machine code), a basic loader, and (on the flip side of the tape) a Turtle graphics program, an 82 page manual and a 3 page user implementation for the 2068. The package is intended for use on the 2068, thus no Spectrum emulation is necessary. The Standard Pascal "files" function is not supported by the HISOFT package but that is the only difference from the norm. This Pascal is fairly full-featured and in fact includes some useful functions not available with Standard Pascal. Both the 2040 and the Aerco printer interface are supported (although some modifications must be done). Mass storage is on cassette and text files as well data may be stored. Unfortunately, disk-access in unavailable at this time.

HISOFT Pascal, being a compiled language, runs many times faster than interpereted BASIC. In my own experience, I was running a program each day in connection with my job that required a great deal of floating point math. The typical time each day was about 20 minutes. After rewriting the code into Pascal, my work time dropped to around 3 minutes. In fact, if I had a faster printer or a larger buffer, that time would probably be less! One program that I was writing and eventually abandoned as too slow in BASIC (each number produced took about 5 minutes) ran in under 30 seconds in Pascal.

While I can readily recommend HISOFT Pascal to anyone needing more zip than BASIC or anyone wishing to learn strucured programming, I must note some drawbacks. First, unless you are satisfied with cassette storage, HISOFT Pascal can be frustrating: in order to save a program file on disc, the compiler/editor, text and run times must all be saved on disc. This tends to fill discs up quickly. As an example, a program of about 100 lines of code, which ought to take up about 1k, will occupy about 29k when saved. I should note that once the final version of a program is written and debugged,

the compiler's "translate," command can be used to create a more compact file but once done the program cannot be modified.

Second, although I'm not sure, it would seem that HISOFT is either out of business or has withdrawn support for the 2068. My letters have gone unanswered and as a Timexer of many years I have come to understand what that usually means.

Next time I'll take a look at some specifics of Pascal programming. In the meantime if there are any questions or comments regarding what you have read here or hope to, please leave me E-mail on the, Night Owl Special BBS (312) 459-5721: (ID23).

TIMEX/SINCLAIR NEWSLETTERS & OTHER PUBLICATIONS
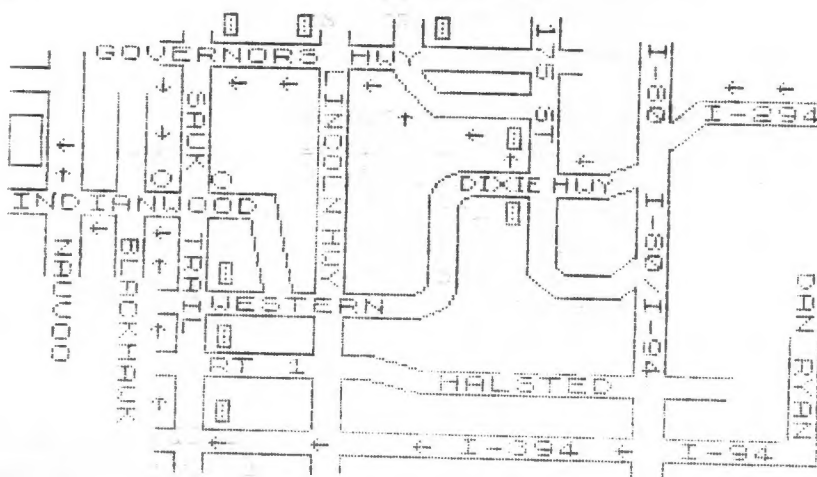### Provided By Gary Lessenberry

1. TS-Horizons, 2002 Sumxit Street, Portsmouth, Ohio 45662
2. Time Designs Magazine, 29722 Hult Road, Colton, Oregon 97017
3. Syncware News, P.O.Box 64, Jefferson, NH 03583
4. QTS, WMJ Data Systems, 4 Butterfly Drive, Hauppaugen, NY 11788
5. QZX, 2025 O'Donnell Drive, Las Cruces, New Mexico 80011
6. The FD-68 User, P.O.Box 310-A, Holland, Michigan 49423
7. BYTE POWER, 1748 Meaxdowview Ave., Pickering, Ontario CANADA L1V-3G8
8. ZX Computing Monthly, Infonet, Times House 179 The Marlzowes, Hemel Hempstead, Herts HPS1 1BB UNITED KINGDOM
9. Computer Shopper, P.O.Box 14119, Titusvillen, FL 32781-9988 (a timex/sinclair column)
10. CTM, 1704 Sam Drive, Birminghamn, Alabama 35235 (carries timex articles)
11. Quantum Levels, P.O.Box 64, Jefferson, N.H. 03583
12. The QL Report, Curry Computer, P.O.Box 5607, Glendale, AZ 85312-5607 tel: (602) 978-2902
13. QL World, 79-80 Petty France, London, ENGLAND SW1H 9ED
14. T.O.P.S. Newsletter, FDD Support Group, C/O John Bylander 1203 N. Owens St. #308, Stillwater, MN 55082
15. Time Linez, P.O.Box 1312, Pacifica, CA 94044
16. CATS Newsletter, P.O.Box 725, Blandensburg, MD 20710
17. The Ramtop Newsletter, James G. Dupuy (editor), 6514 Bradley Avenue (down), Parma, Ohio 44129
18. Slug Newsletter, 4122 Wallingford Lane, Louisville, KY 40218
19. Keyboards, TAS BAM Users Group, P.O.Box 644, Safety Harbor, FL 33572
20. Triangle Sinclair U.G., C/O Douglass Dewey, 206 James St., Carrboro, NC 27510
21. The Data Expansion, T/SUG of Fort Worth, c/o David Baulch, 4424 Geddes Ave., Fort Worth, TX 76107
22. SINCUS NEWS, P.O.Box 36, Johnson City, NY 13790
23. L.I.S.T. Interest Group, P.O.Box 438, Centerport, NY

11721-0438
24. Westinghouse ZX Users, C/O Jack Fogarty, Westinghouse MS #3525, P.O.Box 1521, Baltimore, MD 21203
25. TSUG, Mile High Chapter, 914 S. Victor Way, Aurora, CO 80012
26. SYNAPSE, C/O Robert Heil, 1525 N. Ashwicken Ct., State College, PA 16801
27. SINC-LINC, Toronto T/S User Group, P.O.Box 7274 Stn. A Toronto, Ontario, CANADA M5W 1X9
28. Hampton Roads TS User Group, C/O David Alford, 112 Kohler Crescent, Newport News, VA 23606
29. Dallas T/S Amstrad UG, P.O.Box 153421, Irving, TX 75015
30. Sinclair Milwaukee UG, P.O.Box 101, Butler, WI 53007
31. ZX-APPEAL, Vancouver Sinclair UG, C/O Rod Humphreys, 2006 Highview Place, Port Moody, B.C., CANADA V3H 1N5

MARCH C.A.T.U.G. MEETING

The March meeting of the Chicago Area Timex User Group will be on Saturday, March 21st at 12:00 noon. This meeting will be at the residence of John Ulreich, 203 Nauvoo, Park Forrest. If you have any problems with the following directions, you may call John at 748-6004 for more help.

DIRECTIONS: If you come down I-294, go south past the 167th Street Toll Plaza and exit south on Dixie Highway. Turn right (west) on 175th Street. Proceed west to Governor's Highway where you will turn left and drive south untill you reach Sauk Trail. Turn left (east) and drive to Indianwood. Turn right and go south until you reach Nauvoo. Turn right on Nauvoo and you will find John's house on the left, midway down the block. Please note that the map is NOT drawn to scale and distances are longer than they appear.

HOW TO CONTRIBUTE ARTICLES TO THE NITE-TIMES NEWS

If you would like to contribute an article or program listing to the Nite-Times News, please use one of the two following methods: For on-line contributions, upload your article or program into the Timex File Transfer Area of the Nite Owl Special BBS (312) 459-5721 and leave feedback to the Timex SubOp in the Timex Message Area that you have left an

uploaded contribution. For off-line contributions, save either an Mscript or Tasword text file on tape and mail it to Gary Lessenberry, 1885A Yorktown Avenue, Great Lakes, IL 60088

TIMEX COMPUTER REPAIR CENTERS
Provided By Gary Lessenberry

The following is are sources for the repair of your Timex/Sinclair computers. This is not a recommendation or endorsement by the editor of the Nite-Times News.

1. Timex Comsumer Products,
   P.O.Box 2740
   Little Rock, AR 72203
   (501) 372-1111
   $30.00 for TS-2068 & $20.00 for TS-1000

2. E. Arthur Brown Company
   (612) 762-8847
   (612) 763-6393
   This company will recommend a reliable Timex repair center.

3. T/S Connection
   3832 Watterson Ave.
   Cincinnati, OH 45227

4. Sunset Electronics
   Computer Services Department
   2256 Taraval Street
   Sab Francisco, CA 94116
   (415) 665-8330
   This source provides repairs for the TS-1000, TS-1500, TS-2040, TS-2050, TS-2068 & the ZX-81.

A JLO FDD INTERFACE HARDWARE PROJECT
By Donald Brumfield

My system consists of a TS-2068 with a JLO Disc Interface with a 5.25 inch drive and a pair of Amdek 3 inch drives. I have found that I cannot transfer the contents of the larger discs to the smaller drive or vice versa. This is because the JLO SAFE DOS will transfer files from one drive to the next logical drive (eg: Drive 2 to Drive 3). Since I did not want to invest in a fourth drive, I came up with this project.
   I removed the case on the 5.25 inch drive and mounted a DPDT toggel switch on the case. I located the drive select connector and soldered a wire into each side of the drive select posts for drives 2 and 3. I soldered the other ends of the two wires to the outer posts of the switch. This now allows me to select the drive as either 2 or 3 so that the transfer of files can be accomplished either to or from a 3 inch drive to the 5.25 inch

drive. The total cost for my fourth drive??? A whopping $2.25
TIMEXIN ON.....DON

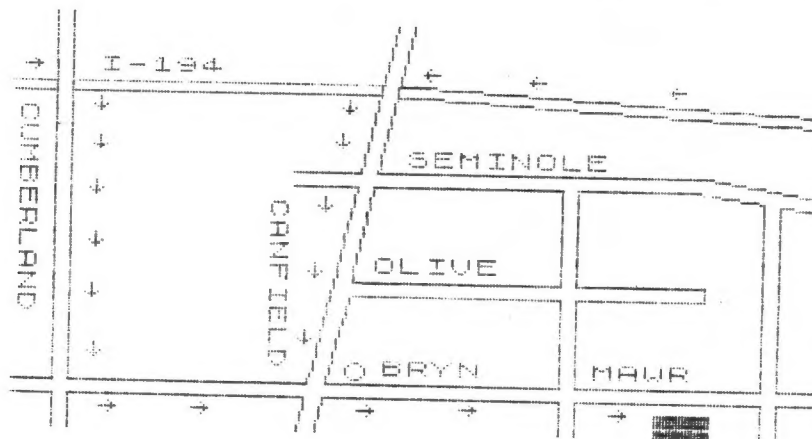## DIRECTIONS TO THE APRIL CATUG MEETING

The April meeting of the Chicago Area Timex Users Group is
tentatively scheduled for Saturday, 25 April at 12:00 noon. It
will be at the home of Lawrence Sauter, 7747 W. Bryn Mawr,
Chicago. Directions to the meetings are as follows:
From The East: Take I-194 (Kennedy Expwy) to Canfield Road.
Turn south on Canfield and proceed two blocks to the first stop
sign (Bryn Mawr). Turn east on Byrn Mawr and drive one and a
quarter blocks to 7747 which is the fourth house from the
corner.
From Thw West: Take I-194 to Cumberland Avenue. Turn south and
get immediately into the left lane. You will turn left on a
frontage road (Bryn Mawr) that is past the Amoco Station and
the Ohara Plaza Hotel. Proceed down Bryn Mawr, past Canfield
Road to 7747.
From North Or South: Take I-294 (Tri-State Tollway) to the
I-194 exit and proceed east to Cumberland Avenue and follow the
directions listed above.
For further information, you may call Lawrence at 763-5383

C.A.T.U.G.
1885-A YORKTOWN AVENUE
GREAT LAKES, ILLINOS 60088